Geophysical Research Abstracts
Vol. 19, EGU2017-14902, 2017
EGU General Assembly 2017

Methodological synergies for glaciological constraints to find Oldest Ice

Olaf Eisen and the BE-OI Team
Alfred-Wegener-Institut, Glaciology, Bremerhaven, Germany (olaf.eisen@awi.de)

The Beyond EPICA – Oldest Ice (BE-OI) consortium and its international partners unite a globally unique concentration of scientific expertise and infrastructure for ice-core investigations. It delivers the technical, scientific and financial basis for a comprehensive plan to retrieve an ice core up to 1.5 million years old. The consortium takes care of the pre-site surveys for site selection around Dome C and Dome Fuji, both potentially appropriate regions in East Antarctica. Other science consortia will investigate other regions under the umbrella of the International Partnerships in Ice Core Sciences (IPICS).
Of major importance to obtain reliable estimates of the age of the ice in the basal layers of the ice sheet are the physical boundary conditions and ice-flow dynamics: geothermal heat flux, advection and layer integrity to avoid layer overturning and the formation of folds.
The project completed the first field season at both regions of interest. This contribution will give an overview how the combined application of various geophysical, geodetical and glaciological methods applied in the field in combination with ice-flow modelling can constrain the glaciological boundary conditions and thus age at depth.